MODIS Vegetation Index
Collection 4 readiness

Terrestrial Biophysics and Remote Sensing Lab.

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Outline

- What has changed for C4 and what are the benefits?

- What are the remaining known issues?

- What changes are expected in the future and in what time-frame (during C4 or for C5)? This should just be a heads up since other changes are likely.

What has changed for C4 and what are the benefits?

- There are many minor changes, but the most important changes for collection 4 are:
  - The adoption of the weighted average scheme for daily orbital observations
  - Handling of both Isinus and Sinus projection
  - Improved data filtering prior to compositing
  - Aerosol consideration in data filtering
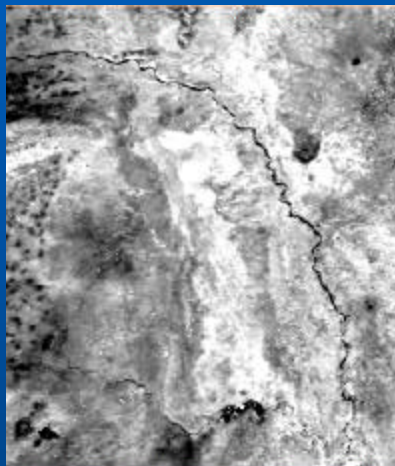 - Use of data separation prior to compositing

✍ **Observations and grid cells have different degrees of overlap that needed to be considered**
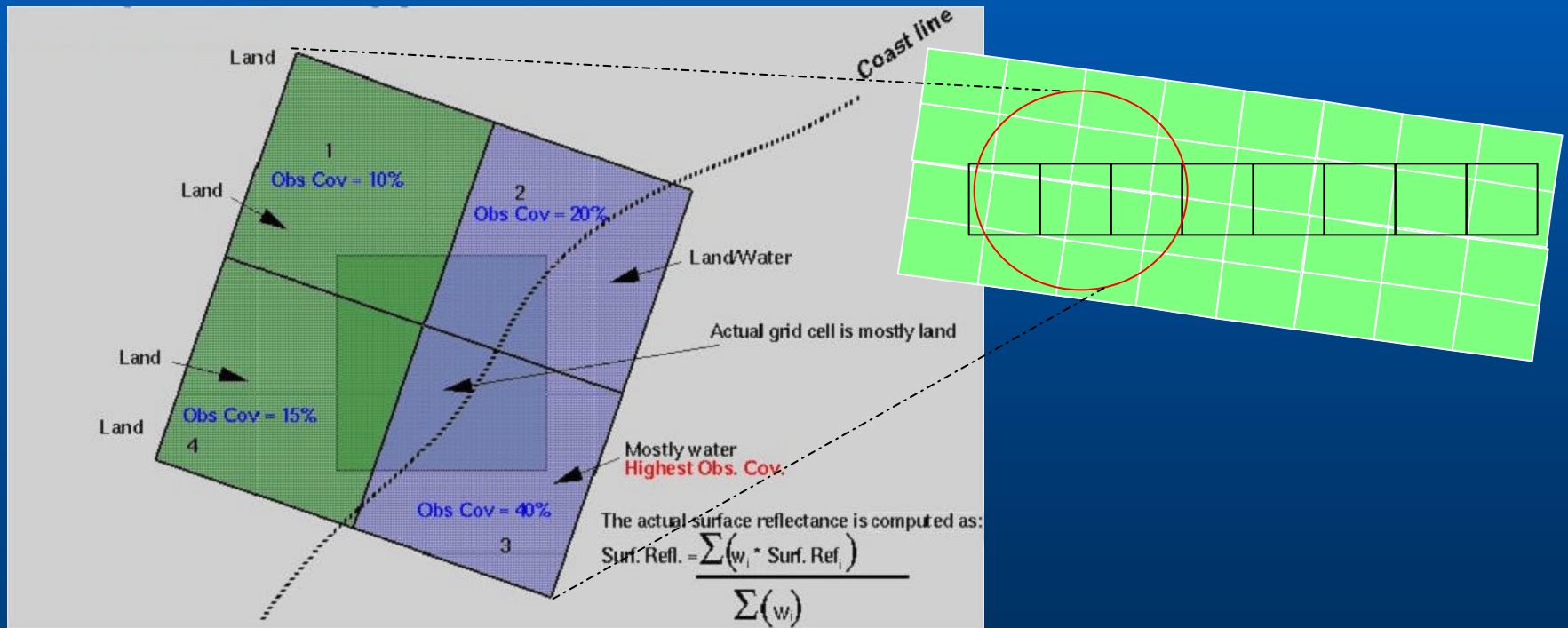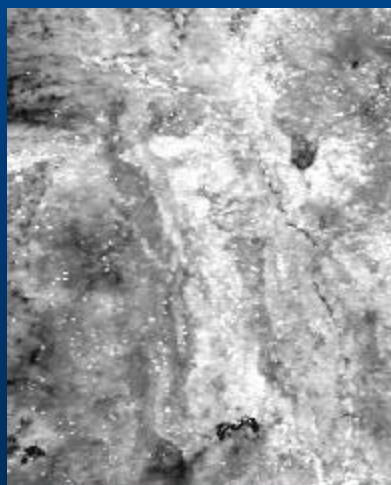
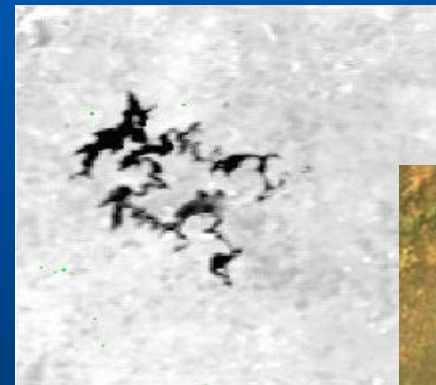# What has changed for C4 and what are the benefits? Continue…

- ✎ **This new procedure resulted in better spatial consistency And tangible differences between the different resolutions**
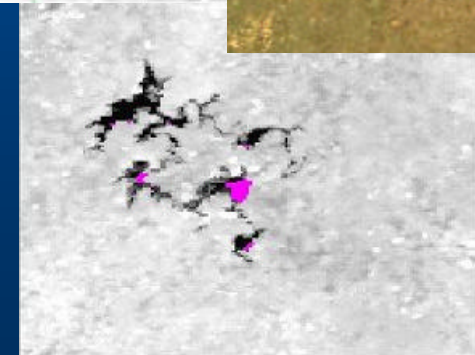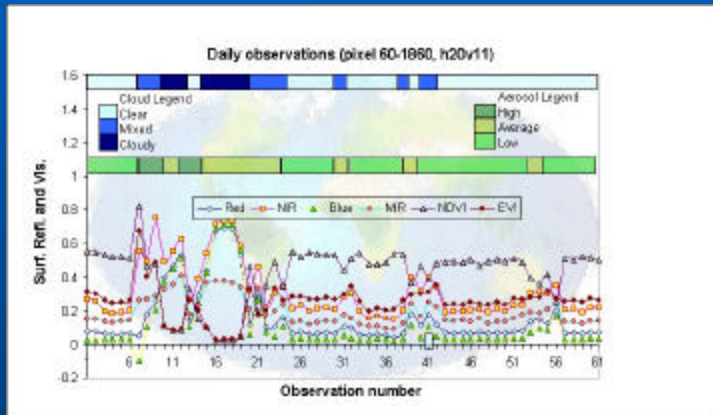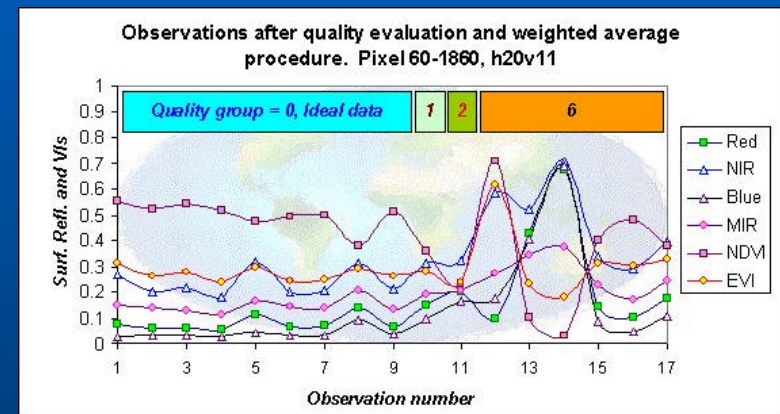

New

Old

New

Old

RGB

Improved data filtering and compositing

> In Collection 4 we adopted a new set of data filters, that resulted in consistent data prior to compositing and resulted in a better product. The series of graphs below illustrate this improvements
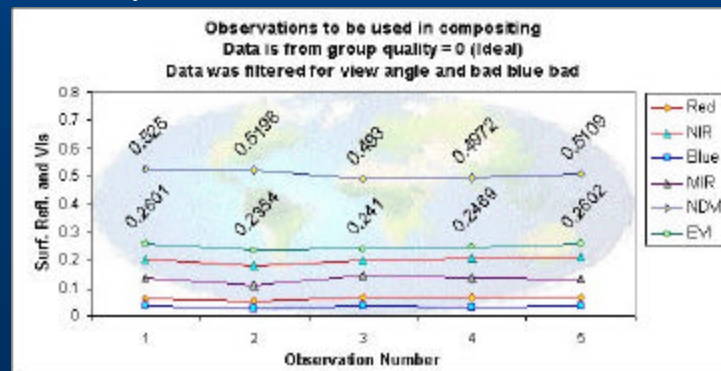

Original data is noisy due to atmosphere

Filtering

Ranking

Data is separated into quality groups
Increasing quality from right to left .

Only the best quality data is Used in compositing

What are the remaining known issues?

- ? **Compositing over persistent clouds is still problematic due to mislabeled cloudy pixels**

- ? **Compositing over aerosol contaminated pixels is still problematic due to the ineffective/poor performance of the aerosol correction algorithm (see figures on next slide)**

- ? **Due to changes in L2 level, specially the cirrus bit change, the VI Algorithms will need to be adjusted**

- ? **The VI usefulness index needs adjustment to reflect the changes in the quality bits**

What are the remaining known issues? Issues with poor aerosol correction
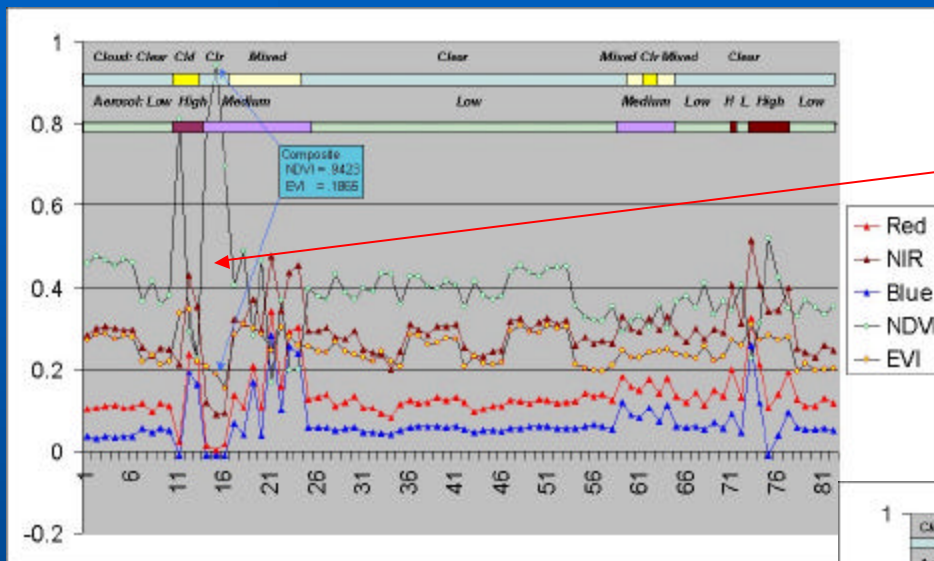
Poor aerosol correction results in poor Surf. Refl. and Vis.
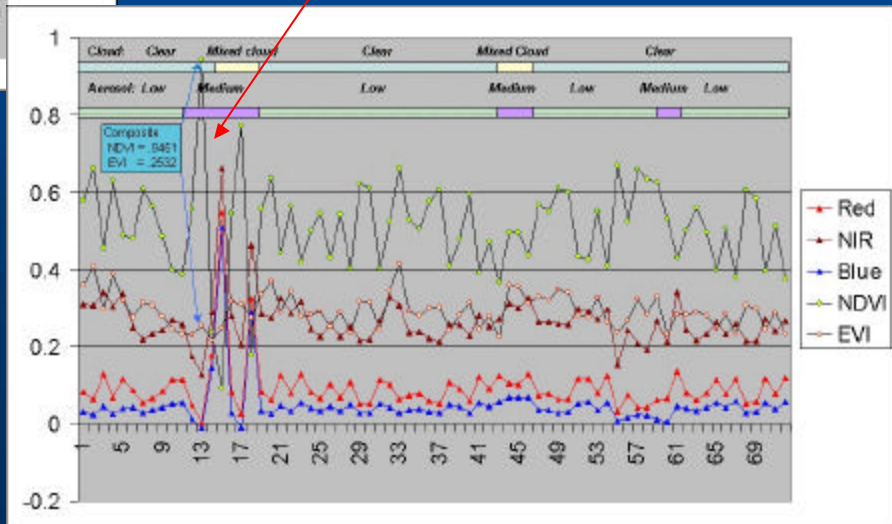
What changes are expected in the future and in what time-frame (during C4 or for C5)? This should just be a heads up since other changes are likely.

- **Collection4:**
  - **Adjust algorithm for cirrus bit change**
  - **Adjust algorithm for aerosol**
  - **Change the VI usefulness index**
- **Collection 5**
  - **Possible BRDF compositing ?**
  - **Sun zenith angle consideration ?**
  - **Proposal to change the compositing algorithm to allow for previous/historical trend use?**